

Short and robust, pale yellow in color and with distinct genitalia. Length 2.5 mm.

Vertex broadly rounded, more than three times as wide as long. Produced two-thirds its length before anterior margins of the eyes. Pronotum three times as long as vertex.

Color: Pale yellow or white washed with bright yellow. Eyes usually dark brown. Elytra whitish subhyaline, claval area washed with yellow.

Genitalia: Female last ventral segment slightly produced and sinuate either side of a slightly produced median tooth-like portion. Male valve short and rather broad. Plates about one and one half times as long as broad, apices blunt. Styles in ventral view rather long, wide at base, triangular, rather abruptly narrowed to divergent finger-like tips. Oedagus in lateral view with a long thick finger-like portion at base extending dorsally. Body of oedagus long and curved, extending dorsally and with apex directed anteriorly.

Male allotype, and female paratypes from Cuba and in the Herbert Osborn collection. This species has been collected in the following localities: Florida, Cuba, Puerto Rico, and Peru.

#### EXPLANATION OF PLATE 9.

Ventral and lateral views of the male genitalia showing styles and oedagus in normal position in the genital chamber. Also drawings of the styles in ventral view, the oedagi in side view, and the last ventral segment of the abdomen of several females.

#### EXPLANATION OF PLATE 10.

Ventral and lateral views of male genitalia, showing styles and oedagus in normal position in the genital chamber.

### FOUR LUPINE APHIDS.<sup>1</sup>

By GEORGE F. KNOWLTON.

This report deals with two described and two apparently undescribed aphids which infest *Lupinus* in western United States.

#### *Aphis* species on *Lupinus*.

Antennal III with 3 to 6 sensoria in alate.....*lupini*

Antennal III with 12 to 18 sensoria in alate.....*lupine-hansoni*, n. sp.

#### *Aphis lupini* Gillette and Palmer.

Gillette and Palmer, *Ann. Ent. Soc. Amer.*, 22 : 18-20, 1929.

This species has been collected in Utah upon *Lupinus* at Grouse Creek, Raft River Mountains (Tanner, Knowlton), and Wellsville, Utah. Wherever found by the writer, the large green, wingless females have been present in abundance.

<sup>1</sup>Contribution from the Department of Entomology, Utah Agricultural Experiment Station.

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Figure A, 7-10, drawn from metatypes, loaned by Professor M. A. Palmer.

*Alate vivipara*.—Antennal III, 0.35 to 0.39 mm. long with 3 to 6 sensoria; IV, 0.25 to 0.31; V, 0.23 to 0.27; VI, 0.14+0.21 to 0.25 mm.; rostral IV+V, 0.18; cornicles dusky, 0.19 to 0.23 mm. long.

*Apterous vivipara*.—Antennal III, 0.35 to 0.4 mm.; without sensoria; IV, 0.26 to 0.33; V, 0.24 to 0.27; VI, 0.14+0.25 to 0.29 mm.; rostrum slenderly obtuse, reaching third coxae; cornicles 0.25 to 0.3 mm.

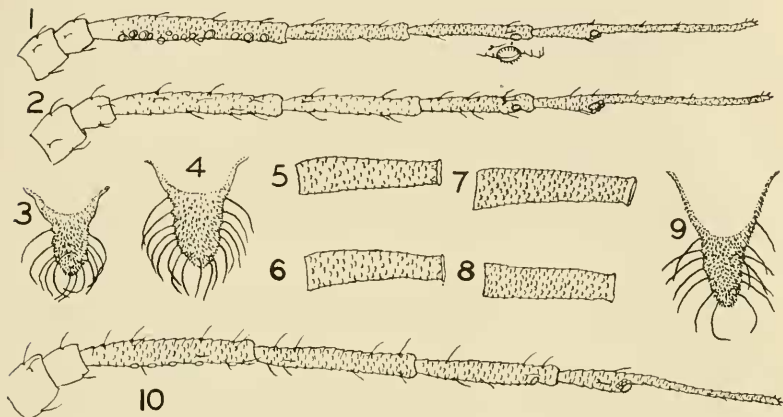


Fig. A.—*Aphis lupine-hansoni*, n. sp. Alate, 1, 3, 6; apterous, 2, 4, 5.  
*A. lupini* G. and P. Alate, 8, 10; apterous, 7, 9.

***Aphis lupine-hansoni*, n. sp.**

This apparently undescribed aphid (Fig. A, 1-6) was collected upon *Lupinus* at Puyallup, Washington, June 23, 1933, by A. J. Hanson, Entomologist of the Western Washington Experiment Station. The writer is indebted to Professor M. A. Palmer of the Colorado Agricultural Experiment Station for examining material of this species.

*Alate vivipara*.—Size 1.7 to 2.36 mm. long and 0.81 to 1.22 wide; antennae 1.42 to 1.66 mm. long and dusky to blackish; antennal III, 0.36 to 0.44 mm. long with 12 to 18 sensoria; IV, 0.24 to 0.33 with 0 to 2 sensoria; V, 0.23 to 0.26; VI, 0.11+0.31 to 0.14+0.37 mm.; rostrum reaching second coxae; rostral IV+V obtuse, 0.13 mm. long; wing venation typical; hind tibiae 1.09 to 1.25 mm. long; hind tarsi 0.13; cornicles blackish, 0.21 to 0.26 mm. long; cauda blackish, 0.11 mm. long through middle of sclerotized portion; tubercles on prothorax and 1 and 7 abdominal segments prominently developed.

*Apterous vivipara*.—Size 2.2 to 2.35 mm. long and 1.5 to 1.62 wide; much of cuticula weakly reticulated to somewhat rugulose; antennae 1.4 to 1.58 mm. long; antennal III, 0.36 to 0.43, without sensoria; IV, 0.26 to 0.29; V, 0.22 to 0.25; VI, 0.12 to 0.13+0.31 to 0.36 mm.; cornicles 0.32 to 0.34 mm., blackish, cylindrical to somewhat wider toward base; cauda blackish; abdomen with

dusky irregular areas near cornicles and elongate dorsal areas on abdominal segments 6 to 8.

*Aphis lupine-hansonii* differs from *A. lupini* G. and P. in having 12 to 18 sensoria upon antennal III of alates and frequently possessing 1 or 2 upon antennal IV, whereas *lupini* has 3 to 6 upon III and none upon IV.

Type in the collection of the writer. Paratypes in the collections of the U. S. National Museum and A. J. Hanson.

MACROSIPHUM SPECIES ON LUPINUS

Antennal III with 20 to 40 sensoria	<i>albifrons</i>
Antennal III with fewer than 30 sensoria in alate and 10 in aptera.....	<i>zionensis</i> , n. sp.

**Macrosiphum albifrons**, Essig.

Essig, *Pomona Jr. Ent.*, 3 : 543-546, 1911.

Dr. E. O. Essig generously supplied the writer with cotype material of this lupine-infesting species (Fig. B, 5-7) for comparison with Utah material of *M. zionensis*.

*Alate vivipara*.—Antennal III, 1.1 to 1.25 mm. with 30 to 45 sensoria; IV, 0.95 to 1.03; V, 0.75 to 0.8; VI, 0.19+1.3 to 1.45 mm.; rostral IV+V, 0.18 mm. long; hind tibiae 3 mm. long; hind tarsi 0.21; cornicles 0.8 to 0.88 mm. long, green, with distal third dusky, and apical 0.15 mm. reticulated.

*Apterous vivipara*.—Antennal III, 1.13 to 1.25 mm. with 25 to 45 sensoria; IV, 0.83 to 0.95; V, 0.65 to 0.85; VI, 0.15 to 0.18+0.99 to 1.4 mm.

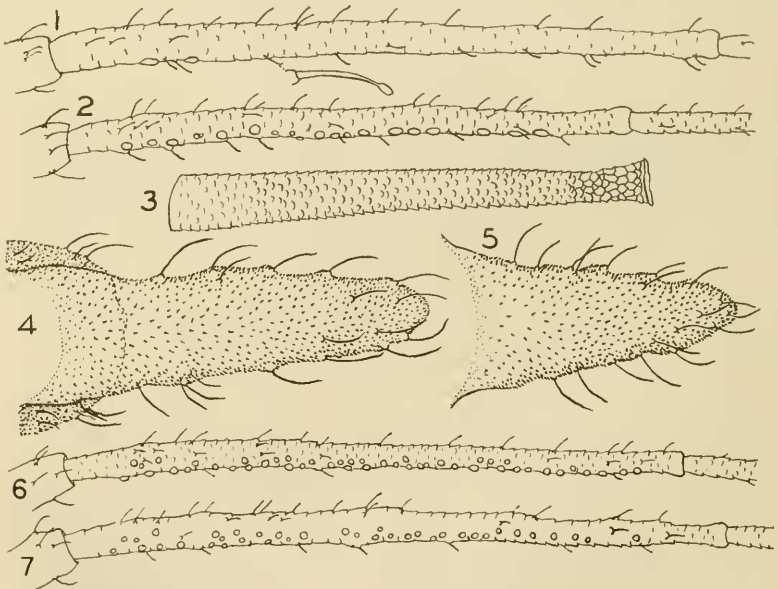


Fig. B. — *Macrosiphum zionensis*, n. sp. Alate, 2; apterous 1, 3, 4, *M. albifrons* Essig. Alate, 6; apterous 5 7

**Macrosiphum zionensis**, n. sp.

Winged and apterous specimens (Fig. B, 1-3) were collected upon *Lupinus* at Panguitch, Utah, July 14, 1925, while the writer was returning from a trip to Zion National Park.

*Alate vivipara*.—Color green; antennal tubercles well developed; antennae long and black, except proximal ends of III and distal tips of III, IV, and V, which are pale; antennal III, 1.15 mm. long, with 25 to 27 sensoria; IV, 1.22; V, 1.03; VI, 0.19+0.80+ (broken); rostrum reaching second coxae, tip narrowly obtuse; rostral IV+V, 0.16 mm.; wing venation typical; hind tibiae 3.4 mm.; hind tarsi 0.26; cornicles black, 0.88 mm. long with about 0.13 mm. at distal end reticulated; cauda large, pale, 0.49 mm. long on mid-line and 0.62 total.

*Apterous vivipara*.—Size large, 4.06 mm. long (exclusive of cauda) and 1.66 wide; antennae dusky with distal third of V and proximal fourth of VI blacker; antennal III, 1.24 mm. long, with 2 to 3 sensoria; IV, 1.22; V, 1.14; VI, 0.23+1.5 mm.; hind tibiae 3.7 mm. long; hind tarsi, 0.26; cornicles black, 0.98 mm. long; cauda pale, about 0.6 mm. long through median sclerotized portion and 0.78 greatest length.

*Macrosiphum zionensis* runs to *M. rudbeckiae* in Gillette and Palmer's key (*Ann. Ent. Soc. Amer.*, 27: 169-170, 1934), from which it differs markedly in color, much longer antennal segments, cauda, cornicles, etc. It more nearly resembled *M. albifrons* Essig, from which it differs in having cornicles black throughout and only about one-tenth as many sensoria on antennal III of aptera.

Type in the collection of the writer.

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**MINUTES OF THE 464TH REGULAR MEETING OF THE ENTOMOLOGICAL SOCIETY OF WASHINGTON, APRIL 4, 1935.**

The 464th regular meeting of the Entomological Society of Washington was held at 8 p. m., Thursday, April 4, 1935, in room 43 of the new building of the National Museum. B. A. Porter, president, presided. Those in attendance numbered 37 members and 19 visitors. The minutes of the previous meeting were read and approved.

Under the heading of business, the Recording Secretary read a report of a meeting of the Executive Committee, held to decide upon the disposition of old publication files of the Society, and reported the decisions reached by the committee.

Upon recommendation of the Executive Committee, Dr. J. W. Folsom, of Tallulah, La., and Mr. C. E. Smith, of Baton Rouge, La., both of the Bureau of Entomology and Plant Quarantine, were elected to membership by unanimous vote of the Society.

Under the heading of "Notes and Exhibition of Specimens" Mr. Austin H. Clark exhibited a typical male of *Enodia creola* (Skinner) taken in Michigan by Bruce, a female from Palos Park, Ill., dated July 9, 1911, and another female